REMARKS

Telephonic Restriction and Provisional Election Without Traverse

Pursuant to a telephonic restriction requirement made by Examiner Ludlow on September 12, 2002, this present response is provided. Accordingly, this response is intended to fully address the restriction requirement made by Examiner Ludlow.

Examiner Ludlow had indicated in the telephone interview of September 12, 2002 that the outstanding claims in the application, namely claims 44-68 and 83-85 were to be restricted as between alleged distinct inventions. Particularly, the Examiner had alleged that claims 44-68 and claims 83-85 embodied and claimed distinction inventions, whereas the method claims of claims 44-68 could be practiced with another apparatus and that the apparatus claims of 44-68 did not require specific features of claim 83, presumably under a combination, sub-combination rationale as described in MPEP § 806.05(d). The Examiner further has indicated that claims 44-55 and 56-68 would further require restriction as an apparatus and a method of practice as described in MPEP § 806.

Accordingly, the Applicant elects claims 83-85 to prosecute in this present application without traverse.

Preliminary Amendment

Amendments to the claims have been made to further claim embodiments of the present invention consistent with the claims and disclosure originally filed. Claim 83 has been amended to provide antecedent basis for "nozzle volume." Amendments to the application have also been made in a previous amendment to voluntarily reduce the number of claims to be initially examined in the present application, to address informalities, such as typographical and grammatical correction, and to further claim embodiments of the present invention. No additional fee should be required for this present amendment. If a fee is required, the Examiner is request to contact the undersigned at her earliest convenience to corrected any underpayment of fees.

Amendments to the present application, in particular amendments to the claims and written description, have been provided with the understanding that the present and originally presented claims, including any embodiments of the present invention disclosed, may be later presented in continuing applications, without prejudice or disclaimer. The amendments have been particularly presented to avoid, where applicable, any admission or estoppel, generally, negatively effecting the scope of protection provided by the disclosure and claims of the present application, and particularly to avoid prosecution history estoppel, limitation of the scope of equivalences, or the like, and without reference to the foreseeability of equivalences or the relation of amendments thereto.

CONCLUSION

Claim 83 has been preliminarily amended and claims 86-110 have been added to the application. Claims 44-68 have been cancelled. Claims 83-110 remain in the application. The Applicant respectfully and earnestly requests early consideration of the present application.

Dated this 17 day of September, 2002.

Respectfully submitted,

Chad C. Soliz
ATTORNEY FOR APPLICANT
PTO No. 47,101
125 South Howes, Third Floor
Fort Collins, Colorado 80522
(970) 224-3100

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Regarding the Claims:

Claims 44-68 have been cancelled.

Claim 83 has been amended as follows:

83. (twice amended) A system for creating a droplet from a jet of a flow cytometer comprising:

a. a nozzle body having an inner surface;

b. a nozzle tip having an inner surface, wherein said nozzle body and said nozzle tip establish a nozzle volume;

c. a seal located off of said inner surface of said nozzle tip and to which both said nozzle body and said nozzle tip are responsive;

d. a sheath fluid port located within said nozzle volume wherein said sheath fluid port introduces a sheath fluid;

e. a substance introduction port located within said nozzle volume; and

f. a free fall area below said nozzle tip and within which said droplet forms.

Claims 86-110 have been added as follows:

86. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, wherein said nozzle tip is sealingly attached to said nozzle body.

87. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

an oscillator to which said sheath fluid is responsive;
a substantially isolated unidirectional coupling which couples said oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and

said oscillator wherein said coupling permits said oscillation to create oscillation in substantially one direction; and
an alternating voltage source having an alternating voltage amplitude of less than one hundred millivolts connected to said oscillator.

88. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

a substantially isolated unidirectional coupling which couples an oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said oscillator wherein said coupling permits said oscillation to create oscillation in substantially one direction; and
an oscillator to which said substantially isolated unidirectional coupler and said nozzle volume are responsive.

89. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:

an oscillator to which said sheath fluid is responsive; and
a unidirectional coupling which couples said oscillator to said sheath fluid.

90. A system for creating a droplet from a jet of a flow cytometer as described in claim 83 or 86, wherein said nozzle body and said nozzle tip are continuously converging.

91. A system for creating a droplet from a jet of a flow cytometer as described in claim 90, further comprising a tip joint of said inner surfaces of said nozzle body and said nozzle tip.

92. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising a flow convergence zone within said nozzle volume, wherein said substance introduction port is located within said flow convergence zone.

93. A system for creating a droplet from a jet of a flow cytometer as described in claim 92, further comprising a location adjuster to which said substance introduction port is responsive.

94. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising:
an oscillator to which said sheath fluid is responsive; and
an alternating voltage source having an alternating voltage amplitude of less than one hundred millivolts connected to said oscillator.

95. A system for creating a droplet from a jet of a flow cytometer as described in claim 83, further comprising an oscillator to which said nozzle volume is responsive.

96. A system for creating a droplet from a jet of a flow cytometer as described in claim 95, further comprising a unidirectional coupling which couples said oscillator to said sheath fluid.

97. A method of creating a droplet from a jet of a flow cytometer, comprising the steps of:

establishing a nozzle volume of a nozzle body and a nozzle tip, said nozzle body and said nozzle tip each having an inner surface;
sealing said nozzle volume off of said inner surface of said nozzle tip; and
forming at least one droplet.

98. A method of creating a droplet from a jet of a flow cytometer as described in claim 97, further comprising the steps of:

introducing a flow of sheath fluid into said nozzle volume;
introducing a flow of a substance at a location within said sheath fluid; and
allowing said sheath fluid to exit from said nozzle volume;
wherein said step of forming at least one droplet comprises forming at least one droplet from said sheath fluid after allowing said sheath fluid to exit from said nozzle volume.

99. A method of creating a droplet from a jet of a flow cytometer as described in claim 97 or 98, wherein said step of sealing said nozzle volume off of said inner surface of said nozzle tip comprises sealing said nozzle volume at an outer surface of said nozzle tip.

100. A method of creating a droplet from a jet of a flow cytometer as described in claim 99, wherein said step of sealing said nozzle volume off of said inner surface of said nozzle tip further comprises sealingly attaching said nozzle tip to said nozzle body at an edge insert of said inner surface of said nozzle body.

101. A method of creating a droplet from a jet of a flow cytometer as described in claim 97, wherein said step of sealing said nozzle volume off of said inner surface of said nozzle tip comprises sealingly attaching said nozzle tip to said nozzle body at an edge insert of said inner surface of said nozzle body.

102. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the steps of:
establishing a substantially isolated unidirectional coupling with said nozzle volume which couples an oscillator to said nozzle volume through use of a directional isolator situated between said nozzle body and said oscillator; and
creating a substantially isolated unidirectional oscillation within said nozzle volume using an alternating voltage with an amplitude of less than one hundred millivolts for said oscillator.

103. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the step of initiating a substantially unidirectional oscillation through use of a directional isolator situated between said nozzle body and an oscillator wherein said substantially unidirectional oscillation occurs within said nozzle volume.

104. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the step of unidirectionally applying an oscillation to said sheath fluid.

105. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the step of continuously converging said sheath fluid.

106. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the step of converging said sheath fluid in a convergence zone, and wherein said step of introducing a flow of a substance at a location within said sheath fluid comprises introducing said flow of a substance in said convergence zone.

107. A method of creating a droplet from a jet of a flow cytometer as described in claim 106, further comprising the step of adjusting the location at which said substance is introduced within said convergence zone.

108. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the steps of:

establishing an oscillator coupled to said nozzle volume; and
applying an alternating voltage with an amplitude less than one hundred millivolts to said oscillator.

109. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the step of initiating an oscillation within said nozzle volume.

110. A method of creating a droplet from a jet of a flow cytometer as described in claim 98, further comprising the step of unidirectionally applying an oscillation to said sheath fluid.

Attorney Docket: Cyto-Nozzle-Div

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	Ger Van den Engh
Serial Number:	09/689,585
Filed:	October 12, 2000
For:	Flow Cytometer Droplet Formation System
Group Art Unit:	1743
Examiner:	Jan Ludlow
Assignee:	University of Washington

CERTIFICATE OF FACSIMILE

I, Cheryl A. Swanson, hereby certify to the truth of the following items:

1. I am an employee of Santangelo Law Offices, P.C., 125 South Howes, Third Floor, Fort Collins, Colorado 80521.

2. I have this day transmitted by facsimile the attached Election and Preliminary Amendment and Letter of Transmittal directed to: Jan Ludlow, facsimile number 703-872-9626.

Dated this 17 day of September, 2002.

Cheryl A. Swanson

Cheryl A. Swanson